



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/812,795

03/30/2004

Masahiro Saito

CU-3674

4209

26530 7590 07/24/2008

LADAS & PARRY LLP
224 SOUTH MICHIGAN AVENUE
SUITE 1600
CHICAGO, IL 60604

EXAMINER

CUTLER, ALBERT H

ART UNIT

PAPER NUMBER

2622

MAIL DATE

DELIVERY MODE

07/24/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/812,795	Applicant(s) SAITO ET AL.	
	Examiner ALBERT H. CUTLER	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,5,7,8,12 and 14-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2,5,7,8,12 and 16 is/are allowed.
- 6) ☒ Claim(s) 14 and 15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is responsive to communication filed on April 24, 2008. Claims 2, 5, 7, 8, 12, 14-16 are pending in the application and have been examined by the Examiner.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 31, 2008 has been entered.

Response to Arguments

3. Applicant's arguments with respect to claims 14 and 15 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 14 is rejected under 35 U.S.C. 102(b) as being anticipated by Hirayama (Japanese Patent 408146503A).

Consider claim 14, Hirayama teaches:

A lens unit for use in conjunction with an image pickup unit in a compact camera module (The invention relates to an interchangeable lens (i.e. lens unit) which can detach and attach an interchangeable lens freely to a camera body (i.e. an image pickup unit in a compact camera module), paragraph 0007.), comprising:

a lens (1, figures 1-8) having a cutout ("cutting portion 1a in the shape of D", 1a, paragraph 0012, figures 1-8) formed in the lens (The cutout (1a) is formed in the bottom of the lens (1). See figures.);

and a lens holder (mounting rim, 11) that holds the lens (1) therein (paragraphs 0009 and 0012), wherein

a ventilation channel is formed between a wall of the cutout (1a) in the lens (1) and the lens holder (11), and the ventilation channel extends at least from a top of the lens to a bottom of the lens (Figure 4 and paragraphs 0016-0018 detail the cutting of the lens (1) along line 1a. Figures 1, 4 and 6 clearly show that the cutout portion (1a) extends at least from the top of the lens to the bottom of the lens. This cutout portion forms a ventilation channel between the lens holder (11) and the lens 1.).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirayama (Japanese Patent 408146503A) in view of Ueyama (US 2002/0167652).

Consider claim 15, and as applied to claim 14 above, Hirayama teaches of a ventilation channel (See claim 14 rationale.).

However, Hirayama does not explicitly teach that the ventilation channel has an air filter disposed therein.

Ueyama similarly teaches of an imaging device (paragraph 0002) with a ventilation channel ("opening") in a lens barrel (3, figure 4, paragraphs 0052 and 0054).

However, Ueyama additionally teaches that the ventilation channel ("opening") has an air filter (filter, 31) disposed therein (see figure 4, paragraphs 0052 and 0054).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to have the ventilation channel taught by Hirayama include an air filter therein as taught by Ueyama for the benefit of supplying fresh air to the lens barrel, reducing heat, removing foreign matters effectively, and preventing dust from entering the lens barrel (Ueyama, paragraph 0054).

Allowable Subject Matter

9. Claims 2, 5, 7, 8, 12 and 16 are allowed.
10. The following is an examiner's statement of reasons for allowable subject matter:

Consider claim 2, the closest prior art, Kim et al. teaches:

A compact camera module (figure 2) comprising a lens unit (8) including a lens (7) and a lens holder (8) holding the lens therein and an image pickup unit ("image sensor module", paragraph 0024) attached to the lens unit (see figure 2), wherein

the image pickup unit comprises:

a circuit board (1 and 3);

an image pickup device (2) on the circuit board (1 and 3);

a cover member (5) arranged on the circuit board (1 and 3) to cover the image pickup device (2); and

an optical filter (4) arranged with respect to the cover member (5) to face the image pickup device (2, see figure 2), wherein

the image pickup device (2) is disposed in a substantially closed space formed by the circuit board (1 and 3), the cover member (5), and the optical filter (4, see figure 2).

However, Kim et al. do not explicitly teach that the cover member contains an air hole, or that the lens unit includes a ventilation channel.

Burnham is similar to Kim et al. in that Burnham teaches of a camera module (figure 1) with a lens (46), a lens holder (36), and an image capturing surface (22) opposed to the position of the lens (46, see figure 1).

However, in addition to the teachings of Kim et al., Burnham teaches that a cover member (interior wall, 56) contains an air hole making the substantially closed space in communication with the outside ("bore or opening", 54, figure 1, column 3, line 18 through column 4, line 20).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to include an air hole as taught by Burnham in the cover member taught by Kim et al. for the benefit of creating a free flow air passage in the camera module which reduces pressure and actively purges the module of dust (Burnham column 3, lines 38-59).

However, the combination of Kim et al. and Burnham does not explicitly teach that the lens unit includes a ventilation channel.

Shinohara et al. is similar to Kim et al. in that Shinohara et al. teach of a lens unit (figure 10) containing at least one lens (L1) and a lens holder (9, 9e).

However, in addition to the combination of Kim et al. and Burnham, Shinohara et al. teach that the lens unit includes a ventilation channel (See the arrows of figure 10, column 7, lines 1-56). Shinohara et al. also teach that the ventilation channel (see the arrows on figure 10) is formed between a wall of a cutout of the lens (L1) and the lens holder (The ventilation channel denoted by the arrows on figure 10 is between a cutout

of the lens(6, the cutout holds the plurality of lenses, i.e. it is a cutout of the lens) and the lens holder(9, 9e). See figure 10.).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to include a ventilation channel as taught by Shinohara et al. in the lens unit taught by the combination of Kim et al. and Burnham for the benefit of properly ventilating air in and out of the lens unit during the screwing of the lens unit into the image pickup unit so that the pressure in the lens unit is maintained substantially equal with the external pressure, enabling the lens unit to be smoothly moved(Shinohara et al., column 1, lines 19-24).

Note: When an alternate configuration of the air hole and cover member, as shown in figure 4 of Burnham is used, the air hole is provided between cover member(12''') and lens holder(36). Because an air hole containing filters 90 and 92 is provided on the inside, as well as the outside of the lens holder(36), an air hole taught by Burnham will be in communication with the ventilation channel taught by Shinohara et al. when the fourth embodiment taught by Burnham is used. See Burnham, column 4, line 55 through column 5, line 11.

However, the prior art of record does not teach nor reasonably suggest that the ventilation channel allows air to escape, or that the cutout is a **cutout in the lens**, as required by claim 2.

Claims 5, 7, 8 and 12 are allowed and being dependent from an allowed claim 2.

Consider claim 16, the closest prior art, Kim et al. teaches:

A method of producing a compact camera module(figure 2, paragraphs 0024-0028), comprising the steps of:

forming an image pickup unit("image sensor module", paragraph 0024) wherein an image pickup device(2) is disposed in a substantially closed space(See figure 2. A substantially closed space is formed by the circuit board(1 and 3), the cover member(5), and the optical filter(4).), wherein the step of forming the image pickup unit comprises the steps of:

installing an image pickup device(2) on a circuit board(1 and 3, paragraphs 0024 and 0025);

covering the image pickup device(2) with a cover member(5) to form the substantially closed substantially closed space(see figure 2, paragraph 0024); and

arranging an optical filter(4) with respect to the cover member(5) to face the image pickup device(2, see figure 2, paragraph 0024);

wherein the cover member(5), optical filter(4), and circuit board(1 and 3) form a substantially closed space(see figure 2, Response to Arguments), and

attaching the image pickup unit to a lens unit(8, paragraph 0024).

However, Kim et al. do not explicitly teach that the cover member contains an air hole to make the substantially closed space in communication with the outside.

Burnham is similar to Kim et al. in that Burnham teaches of a camera module(figure 1) with a lens(46), a lens holder(36), and an image capturing surface(22) opposed to the position of the lens(46, see figure 1).

However, in addition to the teachings of Kim et al., Burnham teaches that a cover member (interior wall, 56) contains an air hole making the substantially closed space in communication with the outside ("bore or opening", 54, figure 1, column 3, line 18 through column 4, line 20).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to include an air hole as taught by Burnham in the cover member taught by Kim et al. for the benefit of creating a free flow air passage in the camera module which reduces pressure and actively purges the module of dust (Burnham column 3, lines 38-59).

However, the prior art of record does not teach nor reasonably suggest that the ventilation channel allows air to escape, or that the cutout is a **cutout in the lens**, as required by claim 16.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALBERT H. CUTLER whose telephone number is (571)270-1460. The examiner can normally be reached on Mon-Thu (9:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc-Yen Vu can be reached on (571) 272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2622

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AC
07/16/2008

***/Ngoc-Yen T. VU/
Supervisory Patent Examiner, Art Unit 2622***